

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-3, and 5-20 are pending. Claim 4 is canceled herein without prejudice to or disclaimer of the subject matter contained therein. Claims 1, 8, 9, 11-13, 16, 19 and 20 are amended, and claim 21 is added. Claims 1, 16, and 21 are independent. The Examiner is respectfully requested to reconsider the rejections in the Office Action in view of the amendments and remarks set forth herein.

Reasons for Entry of Amendments

At the outset, it is respectfully requested that this Amendment be entered into the Official File in view of the fact that the amendments to the claims automatically place the application in condition for allowance.

In the alternative, if the Examiner does not agree that this application is in condition for allowance, it is respectfully requested that this Amendment be entered for the purpose of appeal. In this application claim 4 is canceled. Added independent claim 21 merely combines the subject matter of present claims 1 and 19, and thus raises no new issues. This Amendment was not presented at an earlier date in view of the fact that Applicants did not fully appreciate the Examiner's position until the Final Office Action was reviewed.

Rejections under 35 U.S.C. §103(a)

Claims 1-2, 4, 11-14 and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Spector (U.S. 6,017,049) in view of Swanson et al. (U.S. 6,009,563) and further in view of O'Neill, Jr. (U.S. 6,069,588); and

Claims 3, 5-10, 15-17 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Spector (U.S. 6,017,049) in view of Swanson et al. (U.S. 6,009,563) and O'Neill, Jr. (U.S. 6,069,588) and in further view of Heddle et al. (U.S. 5,703,794). These rejections are respectfully traversed.

Amendments to Independent Claims 1 and 16

While not conceding the appropriateness of the rejections, but merely to advance prosecution of the instant application, independent claim 1 is amended herein to recite a combination of elements directed to a radio communication system for a vehicle including a transmitter-receiver powered by a battery housed within a case of the transmitter-receiver, wherein said radio wave transmitter-receiver is removably mounted at the center of a rear portion of each helmet through a removable fixing member and includes a pair of operation buttons disposed one above another on a rear face of the case, the operations buttons being disposed on either a right side or a left side of the case, and the battery being disposed in the right or the left side of the case opposite to the side where the operations buttons are disposed.

In addition, independent claim 16 is amended herein to recite a combination of elements directed to a radio communication system for a vehicle including a transmitter-receiver powered by a battery housed within a case of the transmitter-receiver, said radio wave transmitter-receiver including:

a pair of operation buttons disposed one above another on one side of a rear face of the case, the operations buttons being disposed on either a right side or a left side of the case, and the battery being disposed in the right or the left side of the case opposite to the side where the operations buttons are disposed.

Added Independent Claim 21

Further, independent claim 21 is added herein to recite a combination of elements directed to a radio communication system for a vehicle including a radio communication apparatus mounted on at least one helmet to be worn by a passenger of said vehicle and including at least a speaker, a microphone and a radio wave transmitter-receiver powered by a battery housed within a case of the radio wave transmitter-receiver; and

a repeating apparatus mounted on said vehicle side for communicating with said radio wave transmitter-receiver, said radio communication apparatus mounted on said helmet communicating with a second helmet through said repeating apparatus,

wherein said radio wave transmitter-receiver includes a pair of operation buttons disposed one above another on one side of a rear face of the case; and a coil antenna accommodated along an upper inner side of the case, said radio wave transmitter-receiver

being mounted in a predetermined posture at the center of the rear portion of each of the helmets.

Full support for the features set forth in claim 1, 16 and 21, including a transmitter-receiver powered by a battery housed within a case of the transmitter-receiver, wherein said radio wave transmitter-receiver is removably mounted at the center of a rear portion of each helmet through a removable fixing member and includes a pair of operation buttons disposed one above another on a rear face of the case, operations buttons being disposed on either a right side or a left side of the case, a battery being disposed in the right or the left side of the case opposite to the side where the operations buttons are disposed, and a coil antenna accommodated along an upper inner side of the case, can be found in the specification, for example, in the paragraph beginning on page 6, lines 1-14. See also FIG. 3.

Further, as pointed out on page 19, beginning at line 2 of the specification, the present invention achieves numerous positive effects not suggested by the references cited by the Examiner. These positive effects include:

(a) Since the radio communication apparatus provided on the helmets for individual passengers communicate with each other through a repeating apparatus carried on a vehicle, it is required only to provide each of the radio communication apparatus with a minimum transmission capacity required for communication over a very short distance with the repeating apparatus. Thus, a reduction in the size and the weight of the radio communication apparatus and a reduction of the power consumption are allowed.

(b) Since a operations buttons and the battery which have comparatively large masses are disposed in the transmitter-receiver to be mounted on each helmet such that they are distributed on the left and the right in a case, even if the transmitter-receiver is mounted at the center of a rear portion of the helmet, the weight balance of the entire helmet is maintained.

(c) Since operation buttons of the transmitter-receiver to be mounted on each helmet are provided on a comparatively wide face which is positioned on a rear face where the transmitter-receiver is mounted at the center of a rear portion of the helmet, the operation buttons can be formed with a larger size and can be operated readily and accurately even if a glove is worn on a hand.

In contrast to the present invention as set forth in claims 1, 16, and 21 none of the references cited by the Examiner including Spector, Swanson et al., O'Neill, Jr., and Heddle et al. teaches or suggests the present invention.

For example,

- Spector (see FIG. 1) teaches a battery external to the transceiver 16;
- Swanson et al. (see FIG. 3) teaches radio 16, and switch 32, a battery 20, and an antenna 18 each of which are separate from each other and certainly not housed together in the case of the transmitter-receiver (thus Swanson teaches away for the presently claimed invention);

- O'Neill, Jr. and Heddle et al. are silent about a transceiver and a case on a helmet;
- None of the cited references suggest a transmitter-receiver powered by a battery housed within a case of the transmitter-receiver; and
- None of the cited references suggests that there was any concern about the problems faced by the present inventors, namely to design a transceiver-receiver providing for a reduction in the size and the weight of the radio communication apparatus, a reduction of the power consumption are allowed, and providing for operations buttons and a battery which have comparatively large masses to be disposed in the transmitter-receiver such that they are distributed on the left and the right of the case.

Prima Facie Case of Obviousness Not Established

In combining the cited references to reject the claims of the present invention, the Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met.

- First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.
- Second, there must be a reasonable expectation of success.
- Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

Prior Art Must Be Considered In Its Entirety,

Including Disclosures That Teach Away From The Claims

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Further it has been established that it is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

The Applicants respectfully submit that the Examiner has not considered at least the Swanson et al. reference in its entirety. Moreover, Swanson et al. clearly teaches away for the present invention, since the radio 16, and switch 32, a battery 20, and an antenna 18 of Swanson et al. are each separate from each other (see Fig. 3). Certainly the Swanson et al.

components are not housed together in the case of the transmitter-receiver, as set forth in claims 1 and 16 of the present invention.

The present inventor designed a transceiver-receiver with a unique configuration of components to achieve the ease of operations, size, and weight balance require by the particular application set forth in the claims. None of the cited references suggest there was any recognition of the problems facing the present inventors, thus there can be no suggestion of a motivation by one skilled in the art to combine the cited references to obtain the present invention.

In view of the amendments and arguments described above, it is respectfully submitted that the cited references, taken alone or in combination, fail to teach or suggest the novel combination of elements recited in independent claims 1 and 16 of the present application. Accordingly, independent claims 1 and 16, as well as the claims depending therefrom, are in condition for allowance; and reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are, therefore, respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject claims, but merely to show the state of the art, no comment need be made with respect thereto.

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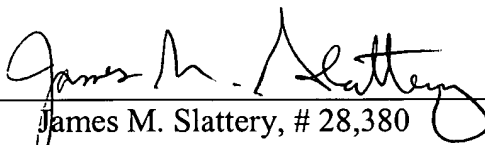
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All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,
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